

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/456,306

DATE: 02/26/2001
TIME: 10:32:18

Input Set : A:\ES.txt
Output Set: N:\CRF3\02262001\I456306.raw

ENTERED

3 <110> APPLICANT: Degussa-Hols AG
5 <120> TITLE OF INVENTION: Novel nucleotide sequences coding for the poxB gene
7 <130> FILE REFERENCE: 990159 BT
C--> 9 <140> CURRENT APPLICATION NUMBER: US/09/456,306
C--> 10 <141> CURRENT FILING DATE: 1999-12-08
12 <160> NUMBER OF SEQ ID NOS: 3
14 <170> SOFTWARE: PatentIn Ver. 2.1
16 <210> SEQ ID NO: 1
17 <211> LENGTH: 2160
18 <212> TYPE: DNA
19 <213> ORGANISM: Corynebacterium glutamicum
21 <220> FEATURE:
22 <221> NAME/KEY: CDS
23 <222> LOCATION: (327)..(2063)
25 <220> FEATURE:
26 <221> NAME/KEY: -35_signal
27 <222> LOCATION: (227)..(232)
29 <220> FEATURE:
30 <221> NAME/KEY: -10_signal
31 <222> LOCATION: (256)..(261)
33 <400> SEQUENCE: 1
34 ttagaggcga ttctgtgagg tcacttttg tgggtcgaa gtctaaatgg ggccagttt 60
36 cgaggcgacc agacaggcggt gcccacatgt tttaatagg cgatcggtgg gcatctgtgt 120
38 ttggtttcga cgggctgaaa ccaaaccaga ctgcccagca acgacggaaa tcccaaaagt 180
40 gggcatccct gtttggtacc gagtacccac ccgggcctga aactccctgg caggcgggccc 240
42 aagcgtggca acaactggaa tttaagagca caattgaagt cgcaccaagt taggaacac 300
44 aatagccata acgttgagga gttcag atg gca cac agc tac gca gaa caa tta 353
45 Met Ala His Ser Tyr Ala Glu Gln Leu
46 1 5
48 att gac act ttg gaa gct caa ggt gtg aag cga att tat ggt ttg gtg 401
49 Ile Asp Thr Leu Glu Ala Gln Gly Val Lys Arg Ile Tyr Gly Leu Val
50 10 15 20 25
52 ggt gac agc ctt aat ccg atc gtg gat gct gtc cgc caa tca gat att 449
53 Gly Asp Ser Leu Asn Pro Ile Val Asp Ala Val Arg Gln Ser Asp Ile
54 30 35 40
56 gag tgg gtg cac gtt cga aat gag gaa gcg gcg gcg ttt gca gcc ggt 497
57 Glu Trp Val His Val Arg Asn Glu Glu Ala Ala Ala Phe Ala Ala Gly
58 45 50 55
60 gcg gaa tcg ttg atc act ggg gag ctg gca gta tgt gct gct tct tgt 545
61 Ala Glu Ser Leu Ile Thr Gly Glu Leu Ala Val Cys Ala Ala Ser Cys
62 60 65 70
64 ggt cct gga aac aca cac ctg att cag ggt ctt tat gat tcg cat cga 593
65 Gly Pro Gly Asn Thr His Leu Ile Gln Gly Leu Tyr Asp Ser His Arg
66 75 80 85
68 aat ggt gcg aag gtg ttg gcc atc gct agc cat att ccg agt gcc cag 641
69 Asn Gly Ala Lys Val Leu Ala Ile Ala Ser His Ile Pro Ser Ala Gln
70 90 95 100 105

BEST AVAILABLE COPY

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/456,306

DATE: 02/26/2001

TIME: 10:32:18

Input Set : A:\ES.txt

Output Set: N:\CRF3\02262001\I456306.raw

72	att	ggg	tgc	acg	ttc	ttc	cag	gaa	acg	cat	ccg	gag	att	ttg	ttt	aag	689
73	Ile	Gly	Ser	Thr	Phe	Phe	Gln	Glu	Thr	His	Pro	Glu	Ile	Leu	Phe	Lys	
74					110					115					120		
76	gaa	tgc	tct	ggg	tac	tgc	gag	atg	gtg	aat	ggg	ggg	gag	cag	ggg	gaa	737
77	Glu	Cys	Ser	Gly	Tyr	Cys	Glu	Met	Val	Asn	Gly	Gly	Glu	Gln	Gly	Glu	
78					125					130					135		
80	cgc	att	ttg	cat	cac	qcg	att	cag	tcc	acc	atg	gcg	ggg	aaa	ggg	gtg	785
81	Arg	Ile	Leu	His	His	Ala	Ile	Gln	Ser	Thr	Met	Ala	Gly	Lys	Gly	Val	
82					140					145					150		
84	tcg	gtg	gta	gtg	att	cct	ggg	gat	atc	gct	aag	gaa	gac	gca	ggg	gac	833
85	Ser	Val	Val	Val	Ile	Pro	Gly	Asp	Ile	Ala	Lys	Glu	Asp	Ala	Gly	Asp	
86					155					160					165		
88	ggg	act	tat	tcc	aat	tcc	act	att	tct	tct	ggc	act	cct	gtg	gtg	ttc	881
89	Gly	Thr	Tyr	Ser	Asn	Ser	Thr	Ile	Ser	Ser	Gly	Thr	Pro	Val	Val	Phe	
90	170					175					180					185	
92	ccg	gat	cct	act	gag	gct	gca	gcg	ctg	gtg	gag	gcg	att	aac	aac	gct	929
93	Pro	Asp	Pro	Thr	Glu	Ala	Ala	Ala	Leu	Val	Glu	Ala	Ile	Asn	Asn	Ala	
94					190					195					200		
96	aag	tct	gtc	act	ttg	ttc	tgc	ggg	gca	ggc	gtg	aag	aat	gct	ccg	gcg	977
97	Lys	Ser	Val	Thr	Leu	Phe	Cys	Gly	Ala	Gly	Val	Lys	Asn	Ala	Arg	Ala	
98					205					210					215		
100	cag	gtg	ttg	gag	ttg	gcg	gag	aag	att	aaa	tca	ccg	atc	ggg	cat	gca	1025
101	Gln	Val	Leu	Glu	Leu	Ala	Glu	Lys	Ile	Lys	Ser	Pro	Ile	Gly	His	Ala	
102					220					225					230		
104	ctg	ggg	gtt	aag	cag	tac	atc	cag	cat	gag	aat	ccg	ttt	gag	gtc	ggc	1073
105	Leu	Gly	Gly	Lys	Gln	Tyr	Ile	Gln	His	Glu	Asn	Pro	Phe	Glu	Val	Gly	
106					235					240					245		
108	atg	tct	ggc	ctg	ctt	ggg	tac	ggc	gcc	tgc	gtg	gat	gct	tcc	aat	gag	1121
109	Met	Ser	Gly	Leu	Leu	Gly	Tyr	Gly	Ala	Cys	Val	Asp	Ala	Ser	Asn	Glu	
110	250					255					260					265	
112	ggc	gat	ctg	ctg	att	cta	ttg	ggg	acg	gat	ttc	cct	tat	tct	gtt	ttc	1169
113	Ala	Asp	Leu	Leu	Ile	Leu	Leu	Gly	Thr	Asp	Phe	Pro	Tyr	Ser	Asp	Phe	
114					270					275					280		
116	ctt	cct	aaa	gac	aac	gtt	gcc	cag	gtg	gat	atc	aac	ggg	gct	cac	att	1217
117	Leu	Pro	Lys	Asp	Asn	Val	Ala	Gln	Val	Asp	Ile	Asn	Gly	Ala	His	Ile	
118					285					290					295		
120	ggg	cg	cg	acc	acg	gtg	aag	tat	ccg	gtg	acc	gg	gt	gt	gct	gca	1265
121	Gly	Arg	Arg	Thr	Thr	Val	Lys	Tyr	Pro	Val	Thr	Gly	Asp	Val	Ala	Ala	
122					300					305					310		
124	aca	atc	gaa	aat	att	ttg	cct	cat	gtg	aag	gaa	aaa	aca	gat	cgt	tcc	1313
125	Thr	Ile	Glu	Asn	Ile	Leu	Pro	His	Val	Lys	Glu	Lys	Thr	Asp	Arg	Ser	
126					315					320					325		
128	ttc	ctt	gat	cg	atg	ctc	aag	gca	cac	gag	cgt	aag	ttg	agc	tcg	gtg	1361
129	Phe	Leu	Asp	Arg	Met	Leu	Lys	Ala	His	Glu	Arg	Lys	Leu	Ser	Ser	Val	
130	330					335					340					345	
132	gta	gag	acg	tac	aca	cat	aac	gtc	gag	aag	cat	gtg	cct	att	cac	cct	1409
133	Val	Glu	Thr	Tyr	Thr	His	Asn	Val	Glu	Lys	His	Val	Pro	Ile	His	Pro	
134					350					355					360		
136	gaa	tac	gtt	gcc	tct	att	ttg	aac	gag	ctg	gct	gat	aag	gat	gct	gtg	1457

BEST AVAILABLE COPY

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/456,306

DATE: 02/26/2001
TIME: 10:32:18

Input Set : A:\ES.txt
Output Set: N:\CRF3\02262001\I456306.raw

137	Glu	Tyr	Val	Ala	Ser	Ile	Leu	Asn	Glu	Leu	Ala	Asp	Lys	Asp	Ala	Val		
138	365								370							375		
140	ttt	act	gtg	gat	acc	ggc	atg	tgc	aat	gtg	tgg	cat	gcg	agg	tac	atc	1505	
141	Phe	Thr	Val	Asp	Thr	Gly	Met	Cys	Asn	Val	Trp	His	Ala	Arg	Tyr	Ile		
142									380				385			390		
144	gag	aat	ccg	gag	gga	acg	cgc	gac	ttt	gtg	ggt	tca	ttc	cgc	cac	ggc	1553	
145	Glu	Asn	Pro	Glu	Gly	Thr	Arg	Asp	Phe	Val	Gly	Ser	Phe	Arg	His	Gly		
146									395				400			405		
148	acg	atg	gct	aat	gcg	ttg	cct	cat	gcg	att	ggt	gct	caa	agt	gtt	gat	1601	
149	Thr	Met	Ala	Asn	Ala	Leu	Pro	His	Ala	Ile	Gly	Ala	Gln	Ser	Val	Asp		
150	410								415				420			425		
152	cga	aac	cgc	cag	gtg	atc	gct	atg	tgt	ggc	gat	ggt	ggt	ttg	ggc	atg	1649	
153	Arg	Asn	Arg	Gln	Val	Ile	Ala	Met	Cys	Gly	Asp	Gly	Gly	Leu	Gly	Met		
154									430			435			440			
156	ctg	ctg	ggg	gag	ctt	ctg	acc	gtt	aag	ctg	cac	caa	ctt	ccg	ctg	aag	1697	
157	Leu	Leu	Gly	Glu	Leu	Leu	Thr	Val	Lys	Leu	His	Gln	Leu	Pro	Leu	Lys		
158									445			450			455			
160	gct	gtg	gtg	ttt	aaa	acc	aac	agt	tct	ttg	ggc	atg	gtg	aag	ttg	gag	atg	1745
161	Ala	Val	Val	Phe	Asn.	Asn	Ser	Ser	Leu	Gly	Met	Val	Lys	Leu	Glu	Met		
162									460			465			470			
164	ctc	gtg	gag	gga	cag	cca	gaa	ttt	ggg	act	gac	cat	gag	gaa	gtg	aat	1793	
165	Leu	Val	Glu	Gly	Gln	Pro	Glu	Phe	Gly	Thr	Asp	His	Glu	Glu	Val	Asn		
166									475			480			485			
168	ttc	gca	gag	att	gcg	gcf	gct	ggg	atc	aaa	tcg	gtc	ccg	atc	acc		1841	
169	Phe	Ala	Glu	Ile	Ala	Ala	Ala	Gly	Ile	Lys	Ser	Val	Arg	Ile	Thr			
170									490			495			500		505	
172	gat	ccg	aag	aaa	gtt	ccg	gag	cag	cta	gct	gag	gca	ttg	gca	tat	cct	1889	
173	Asp	Pro	Lys	Lys	Val	Arg	Glu	Gln	Leu	Ala	Glu	Ala	Leu	Ala	Tyr	Pro		
174									510			515			520			
177	gga	cct	gta	ctg	atc	gat	atc	gtc	acg	gat	cct	aat	gct	ctg	tcg	atc	1937	
178	Gly	Pro	Val	Leu	Ile	Asp	Ile	Val	Thr	Asp	Pro	Asn	Ala	Leu	Ser	Ile		
179									525			530			535			
181	cca	cca	acc	atc	acg	tgg	gaa	cag	gtc	atg	gga	ttc	agc	aag	gct	gcc	1985	
182	Pro	Pro	Thr	Ile	Thr	Trp	Glu	Gln	Val	Met	Gly	Phe	Ser	Lys	Ala	Ala		
183									540			545			550			
185	acc	cga	acc	gtc	ttt	ggg	gga	gga	gta	gga	gct	atg	atc	gat	ctg	gcc	2033	
186	Thr	Arg	Thr	Val	Phe	Gly	Gly	Gly	Val	Gly	Ala	Met	Ile	Asp	Leu	Ala		
187									555			560			565			
189	cgt	tcg	aac	ata	agg	aat	att	cct	act	cca	tgatgattga	tacacctgct					2083	
190	Arg	Ser	Asn	Ile	Arg	Asn	Ile	Pro	Thr	Pro								
191	570								575									
193	gttctcattg	accgcgagcg	cttaactgcc	aacatttcca	ggatggcagc	tcacgcgggt											2143	
195	gccccatgaga	ttggccct															2160	
198	<210>	SEQ ID NO:	2															
199	<211>	LENGTH:	579															
200	<212>	TYPE:	PRT															
201	<213>	ORGANISM:	Corynebacterium glutamicum															
203	<400>	SEQUENCE:	2															
204	Met	Ala	His	Ser	Tyr	Ala	Glu	Gln	Leu	Ile	Asp	Thr	Leu	Glu	Ala	Gln		

BEST AVAILABLE COPY

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/456,306

DATE: 02/26/2001
TIME: 10:32:18

Input Set : A:\ES.txt
Output Set: N:\CRF3\02262001\I456306.raw

205	1	5	10	15
207	Gly Val Lys Arg Ile Tyr Gly Leu Val Gly Asp Ser Leu Asn Pro Ile			
208	20	25	30	
210	Val Asp Ala Val Arg Gln Ser Asp Ile Glu Trp Val His Val Arg Asn			
211	35	40	45	
213	Glu Glu Ala Ala Ala Phe Ala Ala Gly Ala Glu Ser Leu Ile Thr Gly			
214	50	55	60	
216	Glu Leu Ala Val Cys Ala Ala Ser Cys Gly Pro Gly Asn Thr His Leu			
217	65	70	75	80
219	Ile Gln Gly Leu Tyr Asp Ser His Arg Asn Gly Ala Lys Val Leu Ala			
220	85	90	95	
222	Ile Ala Ser His Ile Pro Ser Ala Gln Ile Gly Ser Thr Phe Phe Gln			
223	100	105	110	
225	Glu Thr His Pro Glu Ile Leu Phe Lys Glu Cys Ser Gly Tyr Cys Glu			
226	115	120	125	
228	Met Val Asn Gly Gly Glu Gln Gly Glu Arg Ile Leu His His Ala Ile			
229	130	135	140	
231	Gln Ser Thr Met Ala Gly Lys Gly Val Ser Val Val Val Ile Pro Gly			
232	145	150	155	160
235	Asp Ile Ala Lys Glu Asp Ala Gly Asp Gly Thr Tyr Ser Asn Ser Thr			
236	165	170	175	
238	Ile Ser Ser Gly Thr Pro Val Val Phe Pro Asp Pro Thr Glu Ala Ala			
239	180	185	190	
241	Ala Leu Val Glu Ala Ile Asn Asn Ala Lys Ser Val Thr Leu Phe Cys			
242	195	200	205	
244	Gly Ala Gly Val Lys Asn Ala Arg Ala Gln Val Leu Glu Leu Ala Glu			
245	210	215	220	
247	Lys Ile Lys Ser Pro Ile Gly His Ala Leu Gly Gly Lys Gln Tyr Ile			
248	225	230	235	240
250	Gln His Glu Asn Pro Phe Glu Val Gly Met Ser Gly Leu Leu Gly Tyr			
251	245	250	255	
253	Gly Ala Cys Val Asp Ala Ser Asn Glu Ala Asp Leu Leu Ile Leu Leu			
254	260	265	270	
256	Gly Thr Asp Phe Pro Tyr Ser Asp Phe Leu Pro Lys Asp Asn Val Ala			
257	275	280	285	
259	Gln Val Asp Ile Asn Gly Ala His Ile Gly Arg Arg Thr Thr Val Lys			
260	290	295	300	
262	Tyr Pro Val Thr Gly Asp Val Ala Ala Thr Ile Glu Asn Ile Leu Pro			
263	305	310	315	320
265	His Val Lys Glu Lys Thr Asp Arg Ser Phe Leu Asp Arg Met Leu Lys			
266	325	330	335	
268	Ala His Glu Arg Lys Leu Ser Ser Val Val Glu Thr Tyr Thr His Asn			
269	340	345	350	
271	Val Glu Lys His Val Pro Ile His Pro Glu Tyr Val Ala Ser Ile Leu			
272	355	360	365	
274	Asn Glu Leu Ala Asp Lys Asp Ala Val Phe Thr Val Asp Thr Gly Met			
275	370	375	380	
277	Cys Asn Val Trp His Ala Arg Tyr Ile Glu Asn Pro Glu Gly Thr Arg			
278	385	390	395	400

BEST AVAILABLE COPY

RAW SEQUENCE LISTING DATE: 02/26/2001
 PATENT APPLICATION: US/09/456,306 TIME: 10:32:18

Input Set : A:\ES.txt
 Output Set: N:\CRF3\02262001\I456306.raw

280 Asp Phe Val Gly Ser Phe Arg His Gly Thr Met Ala Asn Ala Leu Pro
 281 405 410 415
 283 His Ala Ile Gly Ala Gln Ser Val Asp Arg Asn Arg Gln Val Ile Ala
 284 420 425 430
 286 Met Cys Gly Asp Gly Gly Leu Gly Met Leu Leu Gly Glu Leu Leu Thr
 287 435 440 445
 289 Val Lys Leu His Gln Leu Pro Leu Lys Ala Val Val Phe Asn Asn Ser
 290 450 455 460
 292 Ser Leu Gly Met Val Lys Leu Glu Met Leu Val Glu Gly Gln Pro Glu
 293 465 470 475 480
 295 Phe Gly Thr Asp His Glu Glu Val Asn Phe Ala Glu Ile Ala Ala Ala
 296 485 490 495
 298 Ala Gly Ile Lys Ser Val Arg Ile Thr Asp Pro Lys Lys Val Arg Glu
 299 500 505 510
 301 Gln Leu Ala Glu Ala Leu Ala Tyr Pro Gly Pro Val Leu Ile Asp Ile
 302 515 520 525
 304 Val Thr Asp Pro Asn Ala Leu Ser Ile Pro Pro Thr Ile Thr Trp Glu
 305 530 535 540
 307 Gln Val Met Gly Phe Ser Lys Ala Ala Thr Arg Thr Val Phe Gly Gly
 308 545 550 555 560
 310 Gly Val Gly Ala Met Ile Asp Leu Ala Arg Ser Asn Ile Arg Asn Ile
 311 565 570 575
 313 Pro Thr Pro
 318 <210> SEQ ID NO: 3
 319 <211> LENGTH: 875
 320 <212> TYPE: DNA
 321 <213> ORGANISM: Corynebacterium glutamicum
 323 <400> SEQUENCE: 3
 324 tgcgagatgg tgaatgggtt tgagcagggtt gaacgcattt tgcatacacgc gattcagtcc 60
 325 accatggcggtt gtaaaagggtt gtccgggttta gtgatttcctt gtgatatcgc taaggaagac 120
 326 gcagggtgacgtt gtacttattttt caatttccactt atttcttcttgc gcactcctgtt ggttgttcccc 180
 327 gatcctactgtt aggctgcacgc gctgggtggag gcgatttaca acgctaagtc tgcacttttgc 240
 328 ttctgcgggtt cgggcgtttaa gaatgtctgc ggcgcagggtt tggagttggc ggagaagattt 300
 329 aaatcaccgtt tcgggcattttc gctgggtggat aagcgttaca tccagcatgttga gaatccgtttt 360
 330 gaggtcggca tgcgttgcctt gcttgggttac ggcgccttgc tggatgcgttcaatgaggcg 420
 331 gatctgttgc ttcttatttttggg tacggattttc ctttattttctt atttcccttcc taaagacaac 480
 332 gttgcccccagg tggatatttcaaa cggtgccgcac atttggtcgac gtaccacgggtt gaagttatccg 540
 333 gtgaccgggtt atgttgcgttca aacaatcgaa aatatttttttgc ctcatgttgc gggaaaaaaaaca 600
 334 gatcggttccctt tccttgcgttgc gatgttgcgttcaag gcacacgc gtaatgttgc gtcgggttgc 660
 335 gagacgttaca cacataacgtt cggaaagcat gttgccttatttcc acccttgcataa cgttgcctctt 720
 336 attttgttgcgttca agctggcggtt taaggatgttgc gttgtttacttgc tggataccggt catgttgcataat 780
 337 gtgtggcatgtt cgaggttacat cggaaatccg gaggaaacgc gcgactttgtt ggggttccatttcc 840
 338 cgccacggca cgtatggcttgc tgcgttgcatttcc catgttgcataat 875

BEST AVAILABLE COPY

VERIFICATION SUMMARY
PATENT APPLICATION: US/09/456,306

DATE: 02/26/2001
TIME: 10:32:19

Input Set : A:\ES.txt
Output Set: N:\CRF3\02262001\I456306.raw

L:9 M:270 C: Current Application Number differs, Replaced Application Number
L:10 M:271 C: Current Filing Date differs, Replaced Current Filing Date

BEST AVAILABLE COPY